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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,708	12/21/2000	Yingjian Chen	WDCRR-001A	9542

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EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT	PAPER NUMBER
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2653

17

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,708

Applicant(s)

CHEN ET AL.

Examiner

Christopher R. Magee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/17/2003 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santini (US 5,621,596) in view of Watanabe et al. (hereinafter Watanabe) (US 6,150,046).

1. Regarding claims 1, 3, 5, 7 and 17, Santini shows a disk drive write head comprising:
 - a bottom pole 48;
 - a write gap layer 50 on said bottom pole 48;
 - a coil 58 on said write gap layer 50;
 - a photoresist insulation layer 60 (i.e., I2) on said coil 58;
 - an insulation shell layer 64 (i.e., I3) on said insulation layer 60 (i.e., I2); and
 - a top pole 52 on said insulation shell layer 64 (i.e., I3) (Fig. 2).

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Santini teaches that the composition of insulation layers can be other than a photoresist such as a dielectric (col. 11, lines 27-30). However, Santini does not disclose the insulation shell layer I3 being formed of a dielectric material having a lower milling rate than a milling rate of the photoresist insulation material I2.

Watanabe teaches Al_2O_3 , SiO_2 , Si_3N_4 , Ta_2O_5 , and AlN (i.e., dielectric materials) exhibit a low milling rate and excellent electric insulation properties (col. 23, lines 54-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the insulation shell layer of Santini with a dielectric as taught by Watanabe.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to provide the insulation shell layer of Santini with dielectrics as taught by Watanabe because they provide excellent insulation properties and protection of the underlying layers (Watanabe; col. 4, lines 22-36 and col. 23, lines 54-58).

2. With regard to claims 2 and 6, the limitation of claims 2 and 6 specifying that “the insulation layer being formed by a process chosen from the group consisting of Physical Vapor Deposition (PVD), sputter deposition, ion beam deposition, Chemical Vapor Deposition (CVD), plasma enhanced Chemical Vapor Deposition (PECVD), Low Pressure Chemical Vapor Deposition (LPCVD) and Atomic Layer Chemical Vapor Deposition (ALCVD)” is a process step in a product claim. A “product by process” claim is directed to the product per se, no matter how it is actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear

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that it is the patentability of the final product per se which must be determined in a “product by process claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in “product by process” claims or not. Hence, since Applicant has not demonstrated that the resulting product is any different by the process of “forming by a process chosen from the group consisting of Physical Vapor Deposition (PVD), sputter deposition, ion beam deposition, Chemical Vapor Deposition (CVD), plasma enhanced Chemical Vapor Deposition (PECVD), Low Pressure Chemical Vapor Deposition (LPCVD) and Atomic Layer Chemical Vapor Deposition (ALCVD)”, the process step does not distinguish over the prior art as applied, *supra*.

3. Regarding claims 4 and 8, Santini shows the disk drive write head includes a read head (Fig. 2).
4. Regarding claim 18, Santini shows a top pole 52, which is formed on said insulation shell layer I3 (Fig. 2).
5. Regarding claim 19, Santini shows a write gap 50 on an insulation shell layer I1; and a top pole 52, on said write gap layer 50 (Fig. 2).

Response to Arguments

Applicant's arguments with respect to claims 1-8 and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

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- Hong et al. (US 6,198,608 B1) is cited to show a MR sensor with blunt contiguous junction and a slow milling rate read gap.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (703) 605-4256. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher R. Magee
Patent Examiner
Art Unit 2653

February 19, 2004



WILLIAM KORZUCH
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